7. (Currently Amended) The interconnect plate of claim 1 where the fuel side ~~elements~~ **plate and a portion of the barrier plate exposed to the fuel flow field** of the interconnect plate are nickel plated.

8. (Original) The interconnect plate of claim [8] 7, where the plating is about 5 to about 10 μm thick.

9. (Original) The interconnect plate of claim 1 wherein interconnect plate is substantially square or rectangular in shape and wherein the fuel intake and exhaust manifolds are arrayed on opposing sides of the square or rectangle and wherein the oxidant gas intake and exhaust manifolds are arrayed on opposing sides of the square or rectangle.

10. (Original) A solid oxide fuel cell stack comprising at least two interconnect plates as claimed in claim 1, a solid oxide fuel cell unit, a manifold seal continuously encircling each manifold, and a cell seal continuously encircling the fuel cell unit, wherein the fuel cell unit, manifold seals and cell seal are disposed between the two interconnect plates.

11. (Cancelled)

REMARKS

1. Specification

The disclosure has been corrected to insert the serial number for the US Patent Application identified on page 6. Paragraph 0027 of the description has been amended accordingly.

2. Claim Objections

Claim 1 has been amended as required by the Examiner.

3. Claim Rejections – 35 USC para. 112

Claim 4 has been amended to depend from claim 3, thereby providing antecedent basis for the limitation "the metal".

Claim 7 has been amended to clarify the meaning of the phrase "the fuel side elements". Support for this amendment may be found in the disclosure, paragraph 0034.

Claim 8 has been amended to depend from claim 7, thereby providing antecedent basis for the limitation "the plating".

4. **Claim Rejections – 35 USC para. 102**

(a) Claim 11 has been rejected by the Examiner under 35 USC 102(e) as being anticipated by Ghosh et al. Claim 11 has been cancelled by the Applicant.

Applicant hereby submits the Affidavit of Michael Pastula, swearing to the fact that the depiction of the interconnect plate shown in the Ghosh et al. reference was derived from the inventors of this application. Thus, it was not the invention "by another".

(b) Claims 1 – 11 have rejected by the Examiner under 35 USC 102(b) as being anticipated by WO 98/24136 (the '136 reference").

With respect, it is submitted that claim 1 is not anticipated by the '136 reference. The basic principle of the present invention is the barrier plate which is a claimed element in claim 1. The barrier plate is the middle layer of the 3 laminations and serves to separate the fuel flow field and the oxidant flow field on opposite sides of the barrier plate.

The '136 reference does not teach a central barrier plate sandwiched between a fuel plate and an oxidant gas plate. The '136 reference teaches the lamination of first and second plate-shaped components, but there is not a third barrier layer between them. The partial channels of the first plate and the partial channels of the second plate communicate with one another to form a continuous passage (See page 4, lines 27-35; page 6 lines 25-29). Thus, the element of separate fuel and oxidant flow fields within a single interconnect plate, separated by a central barrier plate, is not disclosed in the '136 reference. Fluid separation in the '136 reference is accomplished only by the cell membrane itself. Accordingly, in the '136 reference, the fuel cells must be stacked such that

cathode faces a cathode and the anode faces another anode. With the present invention, all fuel cells must be oriented with all cathodes facing in one direction (in series) and all anodes facing in the opposite direction.

(c) Claims 1- 11 have been rejected by the Examiner under 25 USC 102(b) as having been anticipated by the Neutzler reference.

With respect, it is submitted that Neutzler fails to teach the claimed limitations of the present invention. The present invention, as claimed in claim 1 comprises three layers, where only the middle layer forms a barrier to separate the fuel and oxidant gases.

In the Neutzler reference, the fuel and gas layers (58 and 60) are barrier plates in and of themselves. The flow fields on the sheets 58, 60 are formed by grooves etched on the surface of those sheets. There is no middle barrier plate. The middle plate in the Neutzler reference, element no. 62, is not a barrier plate. Conversely, it is heavily perforated so as to permit the circulation of a third fluid, a coolant, within the bipolar plate. Accordingly, the limitations of claim 1 are not taught by Neutzler.

(d) Claims 1-11 have been rejected by the Examiner under 35 USC 102(b) as having been anticipated by the Nichols reference.

With respect, the Nichols reference fails to teach the claimed limitations of claim 1. Each laminated plate (10) in the Nichols reference is a unipolar plate and only handles a single reactant. The middle or intermediate sheet (13) defines a plurality of slits (25') to form a gas distribution grid in cooperation with the openings in the outer sheets. Therefore, the fuel cells in the Nichols reference must be stacked with cathodes facing cathodes and anodes facing anodes.

In the present invention, the middle plate is a barrier plate and separates different reactants on either side of the interconnect. Because the interconnect of the present invention is a true bipolar

plate, the fuel cells may be stacked in series as described above, and unlike the stack necessitated by the laminated plates taught in the Nichols reference.

CONCLUSION

In view of the foregoing remarks and amendments, it is respectfully submitted that claim 1 is free of the prior art. As well, claims 2-10 depend from claim 1 and are similarly free of the prior art. Thus, this application is in condition for allowance and allowance thereof is respectfully requested.

Respectfully submitted,

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